

Listing of the Claims

1. (Previously Presented) A thin film magnetic head comprising:
 - a lower core layer extending from a surface facing a recording medium in a height direction;
 - a magnetic layer connected directly or indirectly to the lower core layer at a predetermined distance from the surface facing the recording medium; and
 - a coil layer toroidally wound around the magnetic layer;wherein a plurality of first coil pieces extending in a direction crossing the magnetic layer is disposed on the lower core layer with predetermined intervals in the height direction, the first coil pieces being covered with a coil insulating layer on which the magnetic layer is formed;
 - a plurality of second coil pieces crossing the magnetic layer is disposed on the magnetic layer with an insulating layer provided therebetween so that ends of each second coil piece face the ends of each first coil piece in a thickness direction;
 - the insulating layer comprises a first insulating sub-layer of an inorganic insulating material formed on a top of the magnetic layer, and second insulating sub-layers of an organic insulating material formed on both sides of the first insulating sub-layer in a track width direction within a region extending in the height direction and including a formation region of the second coil pieces; and
 - the second insulating sub-layers extend beyond both end surfaces of the magnetic layer in the track width direction so as to be interposed between the second coil pieces and both ends surfaces of the magnetic layer.
2. (Original) The thin film magnetic head according to claim 1, wherein the second insulating sub-layers are formed on both sides of the first insulating sub-layer to have a space larger than at least a track width T_w in the track width direction.
3. (Previously Presented) The thin film magnetic head according to claim 1, wherein the magnetic layer has a front end portion in which a width dimension at the

surface facing the recording medium corresponds to a track width, and the width dimension is constant or gradually increases in the height direction, and a rear end portion in which a width between both base ends of the front end portion in the track width direction increases in the height direction, and the second insulating sub-layers and second coil pieces are provided on a rear end portion.

4. (Previously Presented) The thin film magnetic head according to claim 1, wherein a pole tip layer comprising at least a lower pole sub-layer, a gap sub-layer made of a nonmagnetic metal material, and an upper pole sub-layer, which are formed by plating in turn from below, is formed on the lower core layer so that a track width T_w is defined by a width dimension of the pole tip layer in the track width direction at the surface facing the recording medium, and the magnetic layer is laminated on the pole tip layer.

5. (Original) The thin film magnetic head according to claim 4, wherein the magnetic layer has a lower saturation magnetic flux density than that of the upper pole sub-layer.

6. (Previously Presented) The thin film magnetic head according to claim 1, wherein an average thickness of the first insulating layer is smaller than that of the second insulating sub-layers formed on both sides of the first insulating sub-layer.

7. (Withdrawn) The thin film magnetic head according to claim 1, wherein a distance between adjacent ends of at least one pair of adjacent first coil pieces in the height direction is larger than a minimum distance between the first coil pieces in a region where the first coil pieces overlap with the magnetic layer.

8. (Withdrawn) The thin film magnetic head according to claim 7, wherein the plurality of the first coil pieces has parallel portions in the region where the first coil pieces overlap with the magnetic layer.

9. (Withdrawn) The thin film magnetic head according to claim 1, wherein a distance between adjacent ends of at least one pair of adjacent second coil pieces in the height direction is larger than a minimum distance between the second coil pieces in a region where the second coil pieces overlap with the magnetic layer.

10. (Withdrawn) The thin film magnetic head according to claim 9, wherein the plurality of the second coil pieces has parallel portions in the region where the second coil pieces overlap with the magnetic layer.

11. (Withdrawn) The thin film magnetic head according to claim 1, wherein a length dimension of each second coil piece in a first direction perpendicular to a current flow direction is larger than a length dimension of each first coil piece in the first direction.

12. (Withdrawn) The thin film magnetic head according to claim 1, wherein a thickness of each second coil piece is larger than a thickness of each first coil piece.